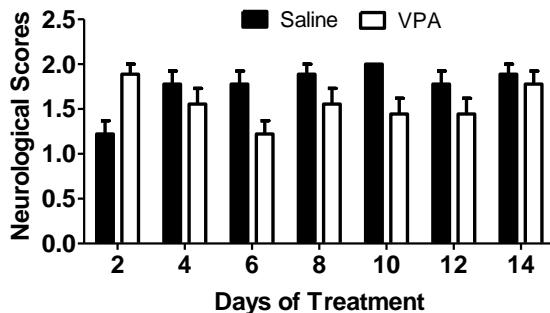
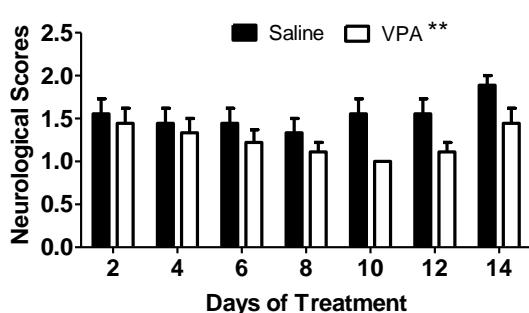


Figure S1:

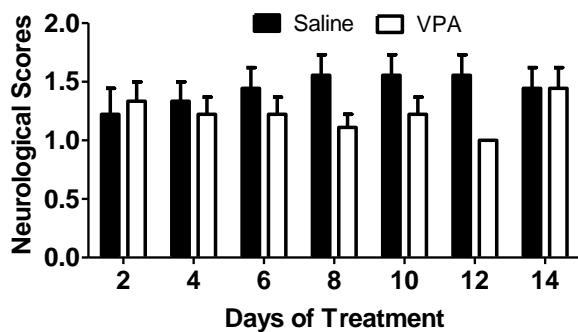
A. Mobility



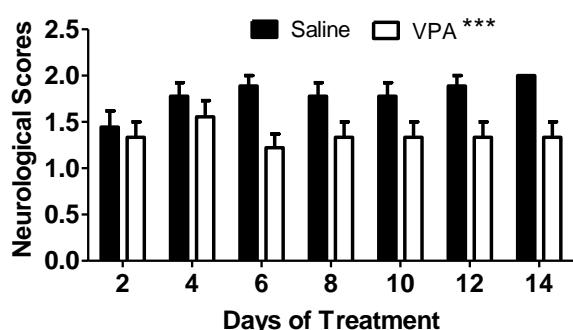
B. Gait



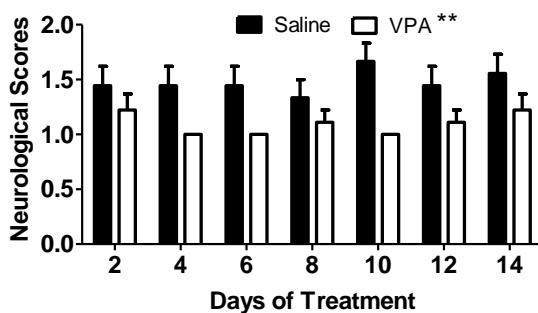
C. Hind limb clasping



D. Tremor



E. Breathing



F. General health condition

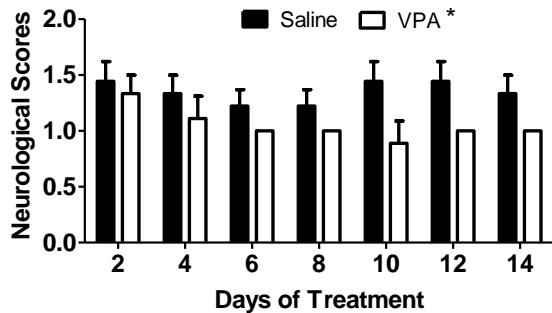
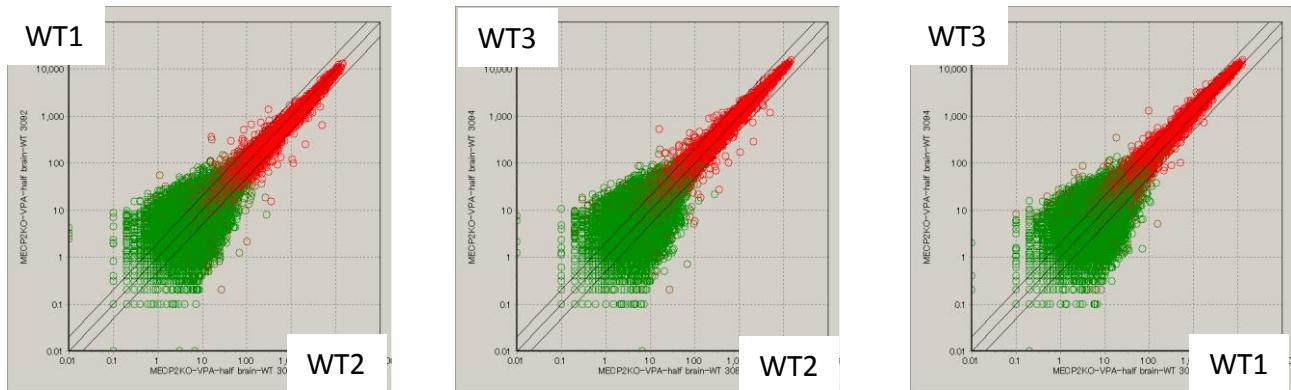


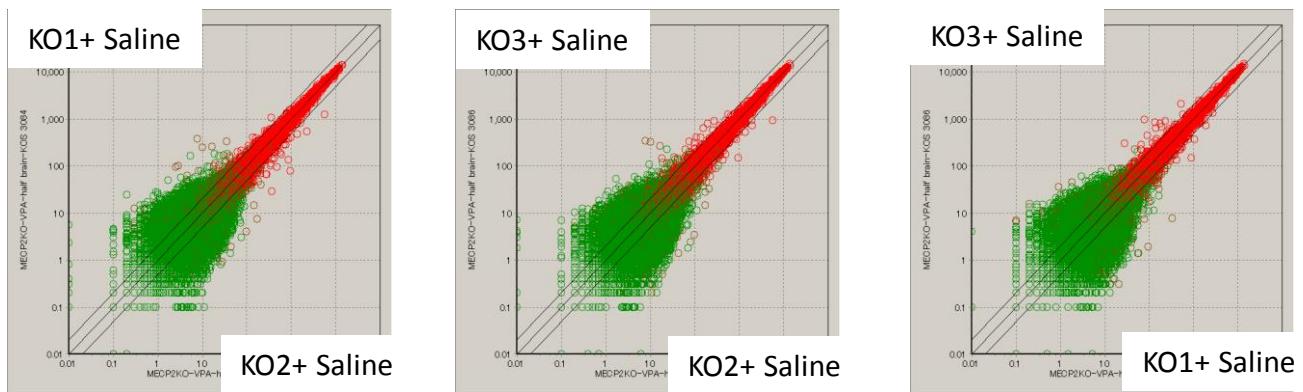
Figure S1.. VPA treatment rescues certain pathological symptoms in MeCP2 KO mice. Except for mobility and hind limb clasping, all other symptoms showed significant improvement by VPA treatment. However mobility showed strong time and treatment interaction. (A) mobility (interaction: $F_{6,96} = 5.657$, $p < 0.0001$; VPA treatment: $F_{6,96} = 2.840$, $p = 0.113$); (B) gait (VPA treatment: $F_{1,96} = 8.544$, $p = 0.01$); (C) hind limb clasping ($F_{1,96} = 2.45$, $p = 0.137$); (D) tremor ($F_{1,96} = 16.42$, $p = 0.0009$); (E) breathing ($F_{1,96} = 14.22$, $p = 0.0017$); and (F) general health conditions ($F_{1,96} = 5.51$, $p = 0.0321$). Data were analyzed using Two-way ANOVA with repeated measure. *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Figure S2:

A



B



C

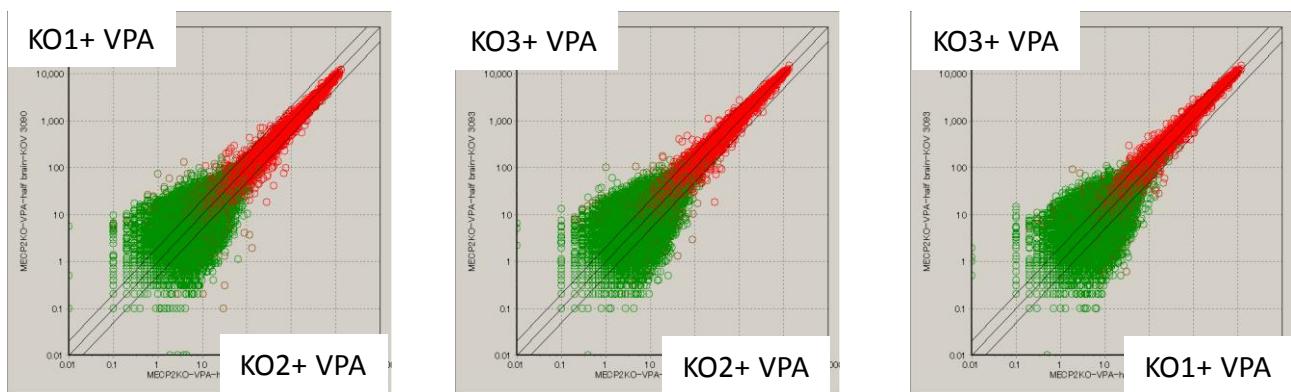


Figure S2. Scatter plots showing reproducibility in gene expression profiles among biological triplicates within each experimental condition.

(A) WT brains (B) KO + Saline (C) KO + VPA

Figure S3:

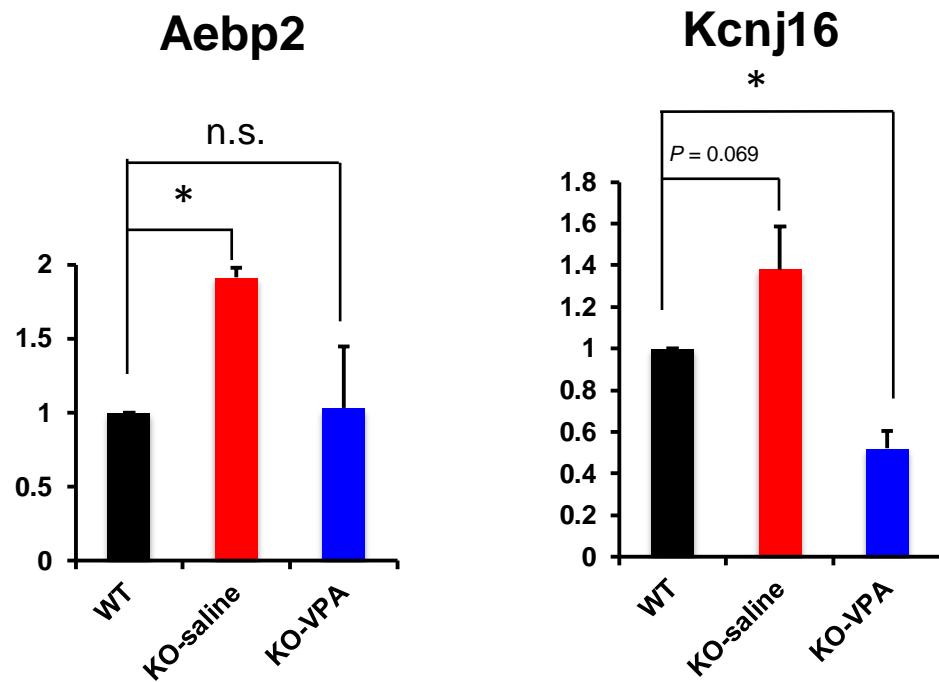


Figure S3. Quantitative PCR data showing restoration of *Aebp2* and *Kcnj16* genes in MeCP2 KO brains by VPA treatment